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| 10/716,468 | 11/20/2003 | Masato Ishizawa | H-1120 | 6857 |

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| EXAMINER | |
|---|---|
| NAGPAUL, JYOTI | |

| ART UNIT | PAPER NUMBER |
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| 1743 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/716,468 | ISHIZAWA ET AL. | |
| | Examiner | Art Unit | |
| | Jyoti Nagpaul | 1743 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-7 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to Claims 3 and 4, applicant recites "and in accordance with time-sequential changes in the result of reagent liquid surface height detection with a reagent vessel." The claim language is highly unclear. It is unclear as to what the applicant's are trying to claim.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-2 and 4** are rejected under 35 U.S.C. 102(b) as being anticipated by Koeda (US 5319954).

With respect to Claim 1, Koeda teaches an apparatus for analyzing liquids. The automatic analyzer comprises a reagent vessel (16) for containing a reagent and a pipette probe (10) that has liquid surface detection function (19) and dispenses a reagent from the reagent vessel (16). The system further comprises a reaction

vessel/reaction container for containing a reagent that is dispensed from the pipette probe (10). The system further teaches an analysis mechanism/automatic analyzer for measuring a reaction between a reagent and a sample with the reaction vessel. The analyzer further comprises a storage means/memory for memorizing liquid surface position information that is acquired by the liquid surface detection function (19). (See Col.4, Lines 26-33) The system further comprises a liquid surface estimation mechanism for estimating the current liquid surface position in accordance with time-sequential changes in liquid surface information stored by the storage means. Koeda teaches if the liquid surface detecting position is too low as with the liquid surface detecting position of the previous time, it is judged to be a bubble. Therefore, Koeda does teach a liquid surface estimation mechanism. (See Col. 4, Lines 49-61) Koeda further teaches a function for controlling a dispensing operation of the pipette probe (10) in accordance with the result of the liquid surface estimation by the liquid surface estimation mechanism. (See Col. 4, Lines 26-68)

With respect to Claim 2, the system further comprises an agitation mechanism for stirring a reagent with the reagent vessel. (See Col. 1, Lines 20-30)

With respect to Claim 4, Koeda further teaches a liquid surface estimation mechanism calculates the reagent liquid surface position using the difference from the liquid surface height determined during the last reagent dispensing operation and in accordance with time-sequential changes in the result of reagent liquid surface height detection within a reagent vessel. (See Col. 4, Lines 20-61) Examiner notes that Claim 4 is directed to a method claim and is not germane to patentability in apparatus claims.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 3 and 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Koeda (US 5319954).

Refer above for the teachings of Koeda.

With respect to Claim 3, Koeda *fails* to explicitly teach the liquid surface estimation mechanism calculates the reagent surface position by the method of least squares that is a function of time-sequential changes in the result of reagent liquid surface height detection with a reagent vessel. Examiner notes this claim is directed to a method claim and is not germane to patentability in apparatus claims.

With respect to Claim 5, Koeda further *fails* to a mechanism for automatically compensating for the amount of a carryover that remains on the outer circumferential surface of the pipette probe when a reagent is dispensed with a pipette probe. Examiner notes this claim is directed to a method claim and is not germane to patentability in apparatus claims.

With respect to Claim 6, Koeda *fails* to explicitly teach a mechanism for automatically compensating for the amount of reagent evaporation from a reagent vessel. Examiner notes this claim is directed to a method claim and is not germane to patentability in apparatus claims.

With respect to Claim 7, Koeda *fails* to explicitly teach a mechanism for cleaning a pipette probe more extensively during dispensing than in a normal dispensing operation if a difference greater than predefined exists between the liquid surface height estimated by the liquid surface estimation mechanism and the liquid surface height measured by the liquid surface detection function. Examiner notes this claim is directed to a method claim and is not germane to patentability in apparatus claims.

With respect to Claim 3, the method of least squares is very well known in the art. This equation can be applied to any set of data points. Koeda teaches determining

the various surface heights of reagent liquid in a number of different tests. Therefore, the system of Koeda is automated and is clearly capable of calculating the reagent surface position by the method of least squares that is a function of time-sequential changes in the result of reagent liquid surface height detection with a reagent vessel. It would have been obvious to one of the ordinary skill in the art to modify the system of Koeda such that the liquid surface estimation mechanism calculates the reagent surface position by the method of least squares that is a function of time-sequential changes in the result of reagent liquid surface height detection with a reagent vessel in order to obtain an optimal trend of the reagent liquid surface height versus the number of conducted tests and therefore increase accuracy in the amount of reagent collected.

With respect to Claim 5, Koeda and the instant application substantially address the same problem. The problem being avoiding the bubbles formed in the reagent container and increase accuracy for obtaining an accurate amount of reagent for dispensing. Koeda's system is clearly capable for automatically compensating for the amount of a carryover that remains on the outer circumferential surface of the pipette probe when a reagent is dispensed with a pipette probe. The amount of carryover is proportional to the reagent liquid surface height. The system of Koeda teaches a reagent liquid surface height and therefore is capable of determining the amount of carryover that remains on the outer circumferential surface of the pipette probe when a reagent is dispensed with a pipette probe. It would have been obvious to one of the ordinary skill in the art to modify the system of Koeda to include a mechanism for automatically compensating for the amount of a carryover that remains on the outer

circumferential surface of the pipette probe when a reagent is dispensed with a pipette probe in order to obtain accurate amount of reagent.

With respect to Claim 6, Koeda's system if clearly capable for automatically compensating for the amount of reagent evaporation from a reagent vessel. The amount of reagent evaporation is directly proportional to the liquid surface height that is determined by the liquid surface detection. It would have been obvious to one of the ordinary skill in the art to modify the system of Koeda to include a mechanism for automatically compensating for the amount of reagent evaporation from a reagent vessel in order to obtain accurate amount of reagent.

With respect to Claim 7, Koeda does teach a mechanism for cleaning a pipette probe. It would have been obvious to one of the ordinary skill in the art to modify the system of Koeda to include a mechanism for cleaning a pipette probe more extensively during dispensing than in a normal dispensing operation if a difference greater than predefined exists between the liquid surface height estimated by the liquid surface estimation mechanism and the liquid surface height measured by the liquid surface detection function in order thoroughly clean the pipette and therefore increase accuracy when obtaining the correct amount of reagent.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Nagpaul whose telephone number is 571-272-1273. The examiner can normally be reached on Monday thru Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JN

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